

BEST AVAILABLE CO (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 23 December 2004 (23.12.2004)

(10) International Publication Number WO 2004/110475 A1

(51) International Patent Classification7: A61P 19/02

A61K 38/39,

(21) International Application Number:

PCT/AU2004/000788

17 June 2004 (17.06.2004) (22) International Filing Date:

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 2003903037

17 June 2003 (17.06.2003)

- (71) Applicant (for all designated States except US): INSTI-TUTE OF NUTRACEUTICAL RESEARCH PTY LTD [AU/AU]; 27/9 Powells Road, Brookvale, NSW 2100 (AU).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): GHOSH, Peter [AU/AU]; 69 Lauderdale Avenue, Fairlight, NSW 2094
- (74) Agent: F B RICE & CO; 605 Darling Street, Balmain, NSW 2041 (AU).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG; CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONNECTIVE TISSUE DERIVED POLYPEPTIDES

Map of the Human type IX collagen molecule showing the 3α chains which constitute the heteropolymer and their collagenous (COL) and non-collagenous (NC) domains.

 $\alpha 1(IX)$ $\alpha 2(IX)$ **\alpha3(IX)**

(57) Abstract: The present invention relates to compositions comprising one or more connective tissue derived polypeptides having a molecular weight of less than 30,000Da which are capable of tolerising individuals to antigenic components of cartilage and prevent the appearance of symptoms of arthritis. The present invention provides methods for recovering polypeptides having a molecular weight of less than 30,000Da from connective tissue and having anti-arthritic or anti-inflammatory activity. The present invention further relates to compositions comprising a polypeptide comprising a collagen type IX alpha (1) chain NC4 domain or biologically active fragment having anti-arthritic or anti-inflammatory activity and a molecular weight of less than 30,000Da, which is capable of tolerising individuals to antigenic components of cartilage and prevent the appearance of symptoms of arthritis.